

Children and Adolescents

Individual and collective exposure to political violence: Palestinian adolescents coping with conflict

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Background: We conducted a survey of Palestinian adolescents in school. We hypothesized that collective and individual exposures to violence would both negatively affect adolescents' mental health. We also anticipated that the negative effect of collective exposures on mental health would be less than that of individual exposures. Our analysis was designed to test these hypotheses. **Methods:** A representative sample of 3415 students of 10th and 11th grades from the Ramallah District of the West Bank participated in the survey. The primary independent variables were scales of individual and collective exposures to trauma/violence (ETV) by the Israeli military and settlers. Factor analysis revealed several sub-scales. Outcome measures were constructed and included: a binary measure of depressive-like states, and emotional, depressive-like state, and somatic scales. Several variables were identified as possible covariates: gender, age, school-type, residence, employment status of father, and identity documents held. **Results:** Logistic and multiple regression analyses revealed a strong relationship between ETV and adolescents' mental health, with both individual and collective exposures having independent effects. There was a higher prevalence of depressive-like symptoms among girls compared with boys, and in adolescents living in Palestinian refugee camps compared with those living in cities, towns and villages. **Conclusion:** The findings confirmed our hypothesis that both individual and collective ETV independently affect the mental health of adolescents. Contrary to expectations, individual exposures did not consistently have a greater negative effect on health outcomes than collective exposures, although the sub-scale of direct personal exposures to violence consistently showed the strongest effect among sub-scales. The results emphasize the importance of going beyond individual experiences and including the health outcomes of collective violation when analyzing violent and traumatic contexts.

Keywords: violence, collective exposure, individual exposure, Palestinian youth, political conflict

Adolescence is a critical period of development physiologically, psychologically, and cognitively. During this period, adolescents begin to explore the world and make decisions about their future roles by incorporating the norms and values of their societies. Yet living under conditions of prolonged conflict can interfere with normal identity development and can radically influence their psychosocial health, as well as their outlook on the future.¹ Adolescents who grow up in such conditions are faced with lack of security and dissolution of social structures, factors that threaten their physical, emotional, and social development.² The lives and well-being of these adolescents, their families and friends are at risk daily. They may experience the loss of or separation from family members, and uprooting or expulsion from their homes. Their parents may become unemployed and relations within the family can be dramatically altered.³ However, responses to living in a context of violence and trauma are not universal in nature and can manifest in a range of mild-to-severe psychological disorders,⁴ or no disorder at all. Indeed, there

is no universal response to highly stressful events, and many of those exposed to the excesses of war heal within community, as personal recovery is deeply rooted in social recovery.⁵

Palestinians have lived in conflict for decades, with the conflict intensifying since the Israeli army re-invasions of September 2000. Since then, every aspect of daily life has been negatively affected. Especially in the 2002–2003 period when this study was completed, army invasions and destruction of property and homes, military checkpoints, closures, curfews, and the erection of the 'separation wall' all led to intense exposure to direct violence and the rapid impoverishment of the population.⁶ Such conditions were described as 'a race to the bottom' in terms of respect for human rights and international humanitarian law.⁷

The severity of conditions and the impact of this societal violation captured world attention, and prompted the World Health Organization to warn of failing Palestinian health.⁸ A special focus on the negative effects of these living conditions was understandably placed on children's physical and mental health. However, studies of exposure to violence have tended to lump adolescents with children, and focus on individual violation and post-traumatic stress and other such disorders.^{9–11}

Research on adolescence has been lacking in Palestine, yet with the exposure of youth and the increase in violence since September 2000, there is an urgent need to assess the impact of exposure to violence and trauma (ETV) on the mental health of youth. There is also a need to distinguish individual from collective ETV as those may have different health outcomes. In this study, we focus on 15–18-year-old adolescents in school. Individual ETV can undoubtedly have a deleterious influence

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on physical and mental health, i.e. the social suffering of war, but does not necessarily lead to psycho-pathology, and may or may not require medical intervention.¹² Furthermore, collective ETV as a social experience, that is, exposures of the general community to the stresses of violence, may have different health outcomes and may require different management approaches than the usual focus on individual exposure.

We hypothesized that collective and individual ETV would both affect adolescents' mental health. Drawing on initial discussions with youth, we anticipated that the effect of collective exposure would be less than the effect of individual exposures because such exposures could also entail a supportive sense of social solidarity, and a better understanding and sharing of experiences among friends, producing sympathies which might have a healing potential. In contrast, we expected that individual exposures would have a greater negative impact on mental health, as those may be experienced in social isolation and appear to target the person alone. Our analysis was designed to test these hypotheses.

Methods

The study was approved by the Institute of Community and Public Health, Birzeit University, Occupied Palestinian Territory (OPT), and the Ethical Review Committee of Queen's University. The fieldwork of this survey was completed in May and early June 2003. Students were asked to report on ETV since the army invasions of March/April 2002. Since the invasion period was so severe and imprinted in the collective memory, it would have been difficult for the students to report on experiencing violence during the past year without including the invasion month as well. Although the Jenin, Nablus and Tulkarm Districts of the West Bank had experienced the worst effects of invasions and exposure to violence during the 2002–2003 period,^{6,13} the Ramallah District was chosen as the focus of this study because of lesser difficulties encountered in reaching schools in the various locales of this district compared to other districts, and in the face of prevailing conditions of military occupation and intensified conflict at the time of the survey.

A list of all students attending the 10th and 11th grades in the Ramallah District of the West Bank, itemized by school and section, was provided by the Palestine Ministry of Education and Higher Education. A representative sample of young people was selected from this list using stratified single stage cluster sampling from the cities, towns, villages and refugee camps of the District. Students were informed that they could choose not to fill the questionnaire or any item contained in it. They were also informed of the measures used to maintain confidentiality. A total of 3415 students participated in this survey out of a sampling list of 3755 students, and were included in this analysis, with a response rate of 91%. The participants formed ~36% of the total number of 10th and 11th grade students attending the Ramallah District schools in 2003–2004.¹⁴

The survey items were derived from focus group discussions with youth; subjective health complaint questions from the World Health Organization's Health Behavior in School-aged Children Survey—HBSC¹⁵ (used throughout Europe, North America and Middle Eastern countries, including Arab societies); the Gaza Traumatic Event Checklist, revised in line with the findings of the focus group discussions;¹⁶ and previous locally disseminated studies completed by some of the authors of this paper.¹⁷ Items used in this analysis are shown in the Appendix.

The primary independent variables of interest in this analysis were scales of individual and collective ETV from the Israeli military and settlers. Several outcome measures were also

constructed. These were a binary measure of depressive-like state, as well as emotional, somatic and depressive-like-state scales, which were constructed *a posteriori* as follows:

Based on the DSM-IV criteria, a depressive-like state was considered present if the following three criteria were met: (i) change from previous function (based on d1 in the appendix); (ii) feeling low or irritable (d2 and d3); and (iii) presence each of weight or appetite changes (d4 and d5), over or under sleeping (d6 and d7), fatigue (d8), and poor concentration or indecisiveness (d9 and d10). Symptoms had to be experienced 'about every day'. Overall, this is a more rigorous definition than that in DSM IV for 'depression'. For example, our criterion (iii) requires the presence of all four of the symptoms—yet the DSM-IV criteria require only four of seven symptoms (the four we included and three others physical agitation, feelings of worthlessness or excessive guilt and thoughts of death).

To develop the scales, questionnaire items that fit the construct of the scale were identified. Modification of the set of variables was made through discussion among team members. Some items were binary (yes/no) and other items were measured on a frequency scale. All item responses were transformed linearly, reversing the scoring as necessary. The scale score was the mean of these transformed values. Reliability coefficients (Cronbach's alpha) were estimated. When omission of an item led to little change or an increase in the alpha, that item was dropped from the scale. Constructions of the exposure and outcome scales were done independently, that is, no decisions made were based on knowledge of relationships among the independent and dependent variables.

The scales of individual and collective ETV each contained 13 items. Those items were grouped based on the intentionality of exposure: personal exposure intentionally directed at the individual (such as house searched, body searched, detained or arrested, used as a human shield) forming the individual ETV scale; and ETV directed at groups of people or the population generally that took place in neighborhoods, streets, and around checkpoints that people crossed as they sought to reach work, schooling and services (such as exposure to tear gas, sound bombs, shelling in the neighborhood) or witnessing the violation of others (such as seeing a stranger being arrested, injured, or killed), forming the collective ETV scale. This conception of ETV resulted from discussion with faculty, staff, and students at the Institute of Community and Public Health in Ramallah, who experienced many of these types of exposures first hand during 2002–2003. Based on these discussions as well as previous focus group discussion with high school and university students and ambulance workers in the Ramallah district, trauma and violence were conceptualized as not merely a personal event and feeling, but also as a social process, integrally linked to witnessing the violation of others in the community. These discussions were instrumental in developing the content of the questionnaire.

To identify subscales, we completed a factor analysis of all 26 items, identifying factors with eigenvalues >1.0, and using principal component analyses with varimax rotation. The 'individual' scale divided into two factors, 'home' (i1–i4) and 'personal' items (i5–i13). The 'collective' scale yielded four factors: 'strangers' (c1–c4), 'friends/neighbours' (c5–c8), 'tear gas/sound bombs' (c9 and c10), and 'shelling/shooting/explosions' (c11–c13).

Several variables were identified as possible covariates: gender; age; school type (private or public/governmental—as a proxy for family socio-economic status); residence (city, town, village, or camp), employment status of father, as a measure of poverty; identity documents (ID) held (distinguishing West Bank, Jerusalem, Jordanian, and Other, given that Palestinian West Bank identity card holders generally experienced more difficulties in crossing checkpoints and

moving around to reach schools and services, or being held or detained arbitrarily compared with Palestinians who carried Jerusalem ID).

Analysis

After creating the scales as described above, we conducted initial data exploration, followed by regression analyses. In one set of regressions the predictors for each of the outcomes were the individual and collective ETV scales, and in another the ETV subscales formed the predictors. For our *a priori* primary outcome, the binary measure of depressive-like states, we ran logistic regressions, examining odds ratios for the ETV scores. The first step in each regression was to force in the covariates. We then added the exposure variables and tested goodness-of-fit with the Hosmer–Lemeshow statistic. For the depressive-like-state, somatic and emotional scales as outcomes, we ran multiple regressions, examining the coefficients to compare the relative effects of individual and collective exposures, and their sub-scales—this was possible as the scales all had the same possible range. We examined residuals and the coefficient of determination (R^2) to check for model fit.

Sensitivity analyses changed the criteria for ‘depressive-like states’—allowing combinations of less frequent symptoms (‘about every day’ or ‘more than once a week’), defining fatigue as d8 or d11, and poor concentration/indisecisiveness using only d9. These gave another seven definitions, and logistic regressions were repeated with these as alternative outcomes.

Results

Of the study participants 48% were males, and 98.5% were 15–18 years old; 53% of the respondents were in Grade 10 and 47% in Grade 11 at the time of the survey. Those attending governmental schools were 92%, and 8% attended private, fee-paying schools. A total of 60% percent reported that their fathers were holding a job, and 34% reported their fathers as unemployed during the month preceding the survey, with 6% reporting that they did not know the employment status of their father. Of the respondents, 93% reported holding a West Bank ID, 3% a Jerusalem ID, and the rest different types of passports (Jordanian, US, Brazilian and Saudi); 58% were residents of villages, 19% of cities, 17% of towns, and 6% of refugee camps that house those displaced in the 1948 Arab–Israeli war (8% of the West Bank Palestinian population is composed of refugees living in camps).¹⁸

Table 1 summarizes the overall ETV results and by gender. Overall, the level of reported ETV was very high. The most frequently reported events were exposure to tear gas and sound bombs, having seen shooting and explosions, and having seen strangers being arrested, injured and humiliated. Having one’s home sealed or demolished, having been beaten by Israeli settlers, and having been stripped in public were the least often events reported. Males reported significantly higher levels of exposure to ETV compared to females. Individual ETV and other Israeli military related events was generally higher in boys than in girls. For example, 54% of boys stated they had had a body search, compared with 9% of girls; and 9% of boys reported being tortured, compared with 1% of girls. Overall, 80% had seen shooting, 28% had seen a stranger killed, and 11% had seen a friend or neighbour killed. The mean of the collective exposures (possible range 1–4) was 1.93 (SD = 0.69); while the mean of individual exposures (adjusted so possible range was also 1–4 was 1.21, SD = 0.31).

Students living in camps and in the city also reported higher mean levels of ETV compared with those living in villages (data not shown, $P < 0.001$ for most variables). Overall, 6.5% of

adolescents had ‘depressive-like states’. As noted earlier, this was based on very conservative criteria. (Relaxing the frequency of symptoms criterion to ‘more than once a week’ instead of ‘about every day’ increased the prevalence to 11.0%; and further changing the determination of fatigue to use d8 or d11, not solely d8, gave a prevalence of 14.9%.) Prevalence was higher in girls than boys (8.2 versus 4.6%, $P < 0.001$); and for those living in camps compared to those in cities, towns and villages (13, 7.8, 6.6, and 5.3%, respectively, $P < 0.001$). The mean collective and individual ETV were each higher in those with ‘depressive-like states’ than in the rest of the sample for both boys and girls. Among boys, the mean collective ETV scores were 2.65 in ‘depressive like states’ and 2.07 in others. Corresponding means for girls were 2.28 and 1.79, respectively. The means for individual ETV in boys were 1.61 and 1.31, and for girls were 1.25 and 1.11, respectively. All P -values based on t -tests with unequal variances were < 0.001 .

The logistic regression equations are summarized in Table 2. When the full (13 item) predictor scales were used, the OR of depressive-like states for a one-point increase in individual ETV was 2.30 (95% CI, 1.48–3.56), and that for collective ETV was 2.57 (95% CI, 2.00–3.28). However, the model did not fit well (Hosmer–Lemeshow $\chi^2 = 16.8$ on 8 df, $P = 0.03$). Using the subscales as predictors showed that four of the six were significant, with the highest OR for ‘personal’ exposures (OR = 2.06, 95% CI 1.35 to 3.14). The next highest ORs were for seeing things happen to ‘strangers’ and to ‘friends/neighbours’. The Hosmer–Lemeshow goodness-of-fit statistic ($\chi^2 = 11.8/8$ df, $P = 0.16$) suggested a reasonable fit for this model. Sensitivity analyses using the different constructions of depression gave similar results (with ORs between 2.0 and 3.0). However, in most of these additional analyses, the OR for individual ETV was higher than for collective ETV.

Equivalent multiple regression analyses were conducted with each of the ‘depressive-like state’, emotional and somatic scales as outcomes (Table 3). After adjustment for covariates, the coefficients for the individual ETV were all highly significant ($P < 0.01$) and fairly similar, 10.5, 14.1, and 10.3 respectively. The coefficients for the collective ETV were of similar magnitude, although the one for somatic outcome was lower. When the six ETV subscales were used as independent variables, the strongest predictor was personal exposures. The ‘home’ variable was never significant. The coefficients of determination (R^2 values) showed that the covariates accounted for ~10% of the variance for depressive-like state and emotional scales, and 3% for somatic symptoms, and the exposure variables accounted for a further 10–12%. Additional regressions showed that none of the interactions between the exposure variables and the confounders was significant.

Discussion

Although responses to traumatic events may be universal, there is no agreement as to how to assess, define, classify or manage these responses. The diagnosis of post-traumatic stress disorder (PTSD) has been traditionally used as a measuring stick for assessing the impact of war and violence on the emotional, psychological and behavioral well being of people exposed to traumatic situations, particularly to war, violence and conflict. The reliance on psychiatric interviewing in assessing trauma has been increasingly criticized, especially when applied to a non-Western setting. Instead, an emphasis on the need to understand the role of cultures in conceptualizing, experiencing and expressing distress has been noted.¹⁹ This is especially important given that evidence demonstrates that cross-cultural differences exist in the manner by which emotional and behavioral disorders and problems are expressed.²⁰

Table 1 Percentage exposure to traumatic events once or more during the preceding 13 months

Percentage exposure ^a	Total (<i>N</i> = 3415)	Male (<i>N</i> = 1637) ^b	Female (<i>N</i> = 1777) ^b
Individual exposures (%)			
House searched	35	40	31
House occupied and you in it	14	16	12
House occupied and you thrown out	9	10	7
Beaten by the Israeli army	15	30	2
Beaten by Israeli settlers	2.4	4.6	0.3
Used as a human shield	6	10	3
Body searched	30	54	9
Detained or arrested	17	29	6
Humiliated	23	34	13
Stripped in public	2.1	3.7	0.6
Interrogated	13	22	5
Tortured	4.8	8.8	1.1
House sealed or demolished	1.7	1.9	1.6
Collective exposures (%)			
Shelling in the neighborhood	31	33	29
Exposed to tear gas	60	72	50
Exposed to sound bombs	63	71	56
Saw shooting	80	86	75
Saw explosion/shelling	50	57	44
Saw stranger being humiliated	67	72	62
Saw stranger being arrested	62	70	54
Saw stranger being injured	49	60	39
Saw stranger being killed	28	32	23
Saw friend/neighbor humiliated	35	42	29
Saw friend/neighbor arrested	37	44	31
Saw friend/neighbor injured	22	30	15
Saw friend/neighbor killed	11	14	8

a: Percentages exclude missing values

b: Chi-squared tests for differences in gender had $P < 0.05$ for all variables

Source: Giacaman et al. (2004)

Moreover, in situations of war and conflict, violence and trauma are often experienced collectively, with repercussions for a sense of community security, and not merely individually. Our analysis had introduced a collective element that goes beyond the effects of individually focused analyses isolated from context, which is especially relevant to the prevailing circumstances in the OPT.

The findings demonstrated a strong relationship between ETV and adolescents' mental health. The risk of developing a 'depressive-like state' was more than doubled for a one-point increase in each of our measures of collective and individual exposures. When we examined the subscales, the strongest relationship was with 'personal' exposures, occurring to young people as individuals. These results were found across all outcomes we used (depressive-like states, somatic complaints and emotional problems). Thus our hypothesis that both types of exposure would independently affect the mental health of

adolescents was confirmed. However, the effect of collective exposures was generally not less than the effect of individual exposures, indicating that the possible protective effect of social solidarity that we anticipated was not operational; or not as strong as expected; or that the collective element would have had an even greater impact if there were less solidarity. A future study could examine the moderating impact of belonging to social and political groups on the health outcomes of exposure to collective trauma. (Collective exposures were much more common than individual exposures, so will have made a much larger contribution to the overall burden of illness.)

There are several possible explanations for this finding. First, importance should be given to meanings and interpretations of societies and cultures.²¹ Palestinians have a strong sense of family and community and violations of those valued meanings may also be traumatic as trauma is also experienced collectively.⁴ Earlier studies, although using a PTSD framework, have

Table 2 Logistic regression coefficients for individual and collective ETV as predictors of binary depressive-like state

Model ^a	Exposure scale ^b	Odds ratio	95% Confidence interval
1	Individual ETV	2.30	1.48–3.56
	Collective ETV	2.57	2.00–3.28
2	Home	1.18	0.88–1.59
	Personal	2.06	1.35–3.14
	Strangers	1.40	1.17–1.68
	Friends/ neighbours	1.30	1.03–1.64
	Gas, sound bombs	1.06	0.89–1.26
	Shooting / explosions	1.28	1.04–1.57

a: Adjusted for gender, age, school type, residence, employment status of father, and identity documents held

b: Possible range for exposure scales: 1–4; See text for description of scales

Hosmer–Lemeshow χ^2 on 8 df: Model 1–16.8, $P = 0.03$; Model 2–11.8, $P = 0.16$

Table 3 Multiple regression coefficients for individual and collective ETV as predictors of outcome scales

Model ^a	Exposure scale	Outcome scale ^b		
		Depressive-like state	Somatic	Emotional
1	Individual ETV	10.5**	14.1**	10.3**
	Collective ETV	13.0**	6.0**	11.8**
2	Home	0.5	1.4	0.0
	Personal	10.0**	12.4**	10.4**
	Strangers	3.9**	2.1**	3.8**
	Friends/ neighbours	2.5**	2.5**	2.1*
	Gas, sound bombs	3.2**	1.1*	2.9**
	Shooting/ explosions	2.9**	0.4	2.4**

a: Adjusted for gender, age, school type, residence, employment status of father, and identity documents held

b: Possible ranges for scales: Outcomes 0–100; Exposures 1–4; See text for description of scales

* $P < 0.05$, ** $P < 0.01$

demonstrated how the effects of violence and trauma on adolescents are magnified by the experience of loss among family and friends.²² In the Palestinian collective culture, this may be important as the political and economic history and realities that people have endured have required high levels of community cohesion for communal survival.²³

Second, Palestinians are living in a state of protracted and heightened conflict, violence, severe closures, curfews, and siege. The trauma of crossing a checkpoint on a daily basis for example, of being deprived of basic freedom of movement and with the risk of not being allowed to cross, or waiting long hours in line, being detained or held, and being exposed to deliberate humiliation,^{24,25} along with a large group of people one identifies with becomes a communal and shared experience. These experiences can have cumulative effects rather than specific effects due to a single incident. Thus the finding that

collective ETV was as strong a predictor of depressive-like states as the individual ETV could be a direct manifestation of an accumulation of both the individual and collective social suffering of war.

The gender differences in exposures and outcomes identified, with girls having a higher prevalence of depressive like symptoms, particularly for the individual ETV, have been corroborated in other studies both in the OPT,¹³ and elsewhere.² The scores on each outcome scale for girls were consistently higher, and girls had a higher prevalence of depressive-like symptoms compared to boys. These results may be explained as gender differences stemming from the way in which boys and girls are socialized in the OPT, with societal norms allowing greater freedoms to boys, especially of movement outside the domestic sphere or the school, and consequently leading to higher exposure among boys, compared to girls.

Thus the manifestations of these differences in socialization in the face of enormous daily life pressures on boys and girls are expressed in different ways. In comparison to girls, boys are more likely to experience injury and are exposed to higher levels of violation by the Israeli army. They tend to externalize by using abusive language and aggressive behaviour to a higher level than girls. A study completed on Palestinian children and youth 8–18 years old found that boys are more likely to get angry, scream or swear to overcome their stressful situations compared to girls.²⁶ Girls, on the other hand, are more likely to feel ‘imprisoned’ at home, with less access to social/political support with possible protective/moderating effect on mental health outcomes, and thus experience more psychological effects related to depression, loneliness and desperation, findings that are analogous to those of other studies.^{27,28} The finding that girls have higher prevalence levels of depressive like states is all the same consistent with findings relevant to culturally diverse societies which are not under military occupation, where females were found to be at higher risk or exhibited higher prevalence rates of depressive disorders compared to males during both adolescence²⁹ and adulthood.³⁰

The finding that those living in refugee camps had higher rates of depressive like states than those in cities, towns and villages is expected, given the miserable nature of life in camps. Palestinian refugee camps were erected by the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), to temporarily house those displaced by the 1948 Arab Israeli war.³¹ It has been well over 50 years since then, with no solution to the question of refugees in sight. In the meanwhile, living conditions in camps continue to be characterized by poverty, over-crowding and severe political, social and psychological pressures.³² Since September 2000, refugees were also among the hardest hit by closure and siege policies and the resulting spiraling unemployment and poverty.³³

Indeed, refugee camp living in itself introduces all sorts of contextual stressors that go beyond living standard and wealth, and even beyond the recent increase in military violence. Trauma in the camp is not merely due to current war like conditions, poverty and over-crowding, but to the long-standing effects of war, inherited from over 50 years of Palestinian history. As with girls, camp dwelling adolescents may have less access to support mechanisms that provide protective/moderating effects on mental health outcomes, perhaps because of the stigma associated with living in a camp, among other factors that can be the subject of future investigations.

Palestinian youth have lived all their lives in conflict and war like conditions. They were either born or were very young children, during the first Palestinian uprising (Intifada), have undergone the disappointments of the peace building period of 1993–2000, and have endured the second Intifada period

and its repercussions. Thus their stressful and desperate life events relate not only to what has taken place during the period, but also to the fact that they have been chronically and cumulatively exposed to trauma and violence over time. The results of our study emphasize the importance of the concept of collectivity in analyzing violent and traumatic contexts, where often, which group one belongs to and where one lives are key determinants of violation and stress.

This study's findings are also relevant to the discourse on the trauma and violation of war and conflict. The findings indicate that conceptualizations of trauma and exposure to violence should go beyond individual experiences, incorporating the impact/health outcome of collective violation on *both* the individual and the collective. To focus on atomized individuals in isolation of what also happens to others, to relationships, and the physical and social worlds that are usually violated or destroyed in war, is to risk focusing interventions on medical or one-to-one therapies and interventions when recovery entails first and foremost the reconstruction of people's lives and their environments. In the case of Palestinian youth, a community centered social approach as opposed to an individualistic therapeutic one may better help in assisting youth in positively coping with the social suffering of war. In the end, however, recovery is rooted in the attainment of justice and then peace.

Strengths and Limitations

The large sample size and the excellent response rates obtained in this survey contribute to its strength. However, weaknesses include the limit on inferring the direction of causality between exposures and outcomes because of the cross sectional nature of the data. Moreover, the data is based on self-reports, without independent confirmation of the exposures or psychosocial outcomes. However, the clear separation through factor analysis of the exposures into subscales, and the very good alpha values (ranging from 0.66 to 0.74) for the outcome scales support the questionnaire response validity. Finally, we have not taken account of the clustering in the analysis because confidentiality and security concerns required that we not identify respondents by their class. This likely led to underestimates of the standard errors of coefficients in our regressions (although the point estimates would remain the same), but the Z-scores were so large for the individual and collective scales that even allowing for the clustering, it is almost certain they would still have been significant. We also think it likely that the nature of the exposure items will not have led to much effect of the cluster sampling by class, and so will not have substantially affected the factor analysis.

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Key points

- Exposure of Palestinian adolescents to the violence of war like conditions is experienced both individually and collectively.
- The findings demonstrate a strong relation between exposure to Israeli army violence and adolescent mental health, with both individual and collective exposures independently affecting the mental health of adolescents.
- Girls reported lower ETV yet a higher prevalence of depressive like symptoms compared to boys. Adolescents living in Palestinian refugee camps had higher rates of depressive like states than those living in cities, towns and villages.
- The results of this study emphasize the importance of the concept of collectivity in analysing violent and traumatic contexts, where often, which group one belongs to and where one lives are key determinants of violation and stress.
- In the case of Palestinian youth, a community centred social approach as opposed to an individualistic therapeutic one may better help in assisting youth in coping with the social suffering of war.

References

- 1 Machel G. The impact of armed conflict on children. *United Nations Department for Policy Coordination and Sustainable Development*. A/51/306, 1996. Available at: http://www.unicef.org/graca/a51-306_en.pdf (accessed March 24 2006).
- 2 Yurtbay T, Alyanak B, Abali O, Kaynak N, Durukan M. The psychological effects of forced emigration on Muslim Albanian children and adolescents. *Commun Ment Health J* 2003;39:203–12.
- 3 Ajdukovic M. Displaced adolescents in Croatia: Sources of stress and post-traumatic stress. *Adolescence* 1998;33:209–16.
- 4 Baker A, Shalhoub-Kevorkian N. Effects of political and military traumas on children: the Palestinian case. *Clin Psychol Rev* 1999;19:935–50.
- 5 Summerfield D. Conflict and mental health: a brief overview. *Br Med J* 2000;321:232–5.
- 6 The World Bank. Four years—Intifada, closures and Palestinian economic crisis. An assessment. The World Bank, October, 2004.
- 7 Editorial. Failure to address the health toll of the Middle East Crisis. *Lancet* 2002;359:1261.
- 8 Kapp C. WHO gives warning on failing Palestinian Health. *Lancet* 2002;360:1081.
- 9 Qouta S, Odeh J. The impact of conflict on children. The Palestinian Experience. *J Ambul Care Manage* 2005;28:75–9.
- 10 Thabet AAM, Abed Y, Vostanis P. Emotional problems in Palestinian children living in a war zone: a cross sectional study. *Lancet* 2002;359:1801–4.
- 11 Khamis V. Child psychological maltreatment in Palestinian families. *Child Abuse Neglect* 2000;24:1047–59.
- 12 Summerfield D. The invention of post-traumatic stress disorder and the social usefulness of a psychiatric category. *Br Med J* 2001;322:95–8.
- 13 Giacaman R, Hussein A, Gordon NH, Awartani F. Imprints on the consciousness. The impact on Palestinian civilians of the Israeli army invasion of West Bank towns. *Eur J Pub Health* 2004;14:286–290.
- 14 Unpublished data. Ministry of Education and Higher Education—Educational survey data base 2003/2004. Palestinian Central Bureau of Statistics 2006.
- 15 Currie C, Samdal O, Boyce W, Smith R, editors. *Health Behaviour in School-aged Children: a WHO Cross-National Study. Research Protocol for the 2001/2002 Survey*. Edinburgh, Scotland: University of Edinburgh, Child and Adolescent Health Research Unit, 2001.
- 16 Thabet AA, Vostanis P. Post traumatic stress disorder reactions in children of war: a longitudinal study. *Child Abuse Neglect* 2000;24:291–8.

- 17 Giacaman R, Saab H, Nguyen-Gillham V, Abdullah A, Naser G. *Palestinian adolescents coping with trauma*. Birzeit: Institute of Community and Public health, Birzeit University, 2004.
- 18 United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA). Annual Report of the Department of Health 2003. http://www.un.org/unrwa/publications/pdf/ar_health2003.pdf (accessed September 1 2006); and Palestinian Central Bureau of Statistics. Projected mid-year population in the Palestinian Territory by Governorate (2001–2007). http://www.pcbs.gov.ps/Portals/_pcbs/populati/demd1.aspx (accessed September 1 2006).
- 19 Parker M. The mental health of war-damaged populations. *Inst Dev Stud Bull* 1996;27:77–84.
- 20 Rahman A, Mubbashar M, Harrington R, Gater R. Annotation: developing child mental health services in developing countries. *J Child Psychol Psychiatr* 2004;41:539–46.
- 21 Bracken P, Thomas P. Postpsychiatry: a new direction for mental health. *Br Med J* 2001;322:724–7.
- 22 Pynoos RS. Post-traumatic stress disorder in children and adolescents. In: Garfinkel BD, Carlson GA, Weller EB, editors. *Psychiatric Disorders In Children and Adolescents*. Philadelphia: WB Saunders, 1990, pp. 48–63.
- 23 Barber BK. Political violence, social integration, and youth functioning: Palestinian youth from the Intifada. *J Commun Psychol* 2001;29(3):259–280.
- 24 Levi G. Where hatred and despair are fomented. *Haaretz Daily*, January 18 2004.
- 25 Laor Y. Al-mahsum, mahsom, checkpoint. *Haaretz Daily*, December 2 2004.
- 26 Hundt GL, Chatty D, Thabet AA, Abuateya H. Advocating multi-disciplinarity in studying complex emergencies: the limitations of a psychological approach to understanding how young people cope with prolonged conflict in Gaza. *J Biosoc Sci* 2004;36:417–31.
- 27 Farah R. *A Report on the psychological effects of overcrowding in refugee camps in the West Bank and Gaza Strip*. Prepared for the Expert and Advisory Services Fund—International Development Research Centre, Canada: IDRC, 2000.
- 28 Miller T, El-Masri M, Allodi F, Quota S. Emotional and behavioral problems and trauma exposure of school-aged Palestinian children in Gaza: some preliminary findings. *Med Confl Surv* 1999;15:368–78.
- 29 Adewuya AO, Ogunun YA. Factors associated with depressive symptoms in Nigerian adolescents. *J Adolesc Health* 2006;39:105–110.
- 30 Marcus SM, et al. Gender differences in depression: findings from the STAR*D study. *J Affect Disord* 2005;87:141–150.
- 31 UNRWA website:<http://www.un.org/unrwa/overview/index.html>, accessed February 2006.
- 32 Khamis V. Post-traumatic stress disorder among school age Palestinian children. *Child Abuse Neglect* 2005;29:81–95.
- 33 Kapp C. United Nations agency launches new appeal for Palestinian refugees. *Lancet* 2001;357:2113.

Appendix

Questionnaire items used

Items i1–i13, and c9–c11:

1 = Never, 2 = Once, 3 = Twice, 4 = Three times, 5 = More than 3 times

Since March 2002 and until the present [May 2003] how many times have you experienced the following?

Individual ETV

'House' ($\alpha = 0.66$):

- i1. House searched
- i2. House occupied while you were in it
- i3. House occupied and you were thrown out
- i4. House sealed or demolished

'Personal' ($\alpha = 0.76$):

- i5. Beaten by the army
- i6. Beaten by settlers
- i7. Used as a human shield

- i8. Body searched
- i9. Detained and/or arrested
- i10. Humiliated (cursed, bullied, shoved, dragged)
- i11. Stripped in public
- i12. Interrogated
- i13. Tortured

Collective ETV

'Tear gas, sound bombs':

- c9. Exposed to tear gas
- c10. Exposed to sound bombs

[The remaining items in the collective scale, except c11, used the responses: 1 = Never, 2 = Once, 3 = Twice, 4 = Three or more times]

'Strangers' ($\alpha = 0.84$): Have you seen strangers being:

- c1. Humiliated
- c2. Arrested
- c3. Injured
- c4. Killed

'Friends/neighbours' ($\alpha = 0.77$): Have you seen friend(s) or neighbour(s) being:

- c5. Humiliated
- c6. Arrested
- c7. Injured
- c8. Killed

'Shelling (shooting) explosions' ($\alpha = 0.70$):

- c11. Shelling in the neighbourhood (5. pt response)
Have you witnessed the following?
- c12. Shooting
- c13. Explosions/shelling

Depressive like states—Binary

Algorithm as noted in text using the following items.

5-point response (1 = about every day, 2 = more than once a week, 3 = about every week, 4 = about every month, 5 = rarely or never); or binary (yes/no) response as indicated.

Since (the invasion of) March 2002, and until the present, have you experienced the following?

- d1. Inability to do normal daily tasks (school attendance, house chores, work)—Binary
- d2. Feeling low (depressed)—5-point
- d3. Irritability or bad mood—5-point
- d4. Loss of appetite/weight loss—Binary
- d5. Increased appetite/weight loss—Binary
- d6. Difficulty getting to sleep—5-point
- d7. Difficulty sleeping - Binary
- d8. General feelings of fatigue—5-point
- d9. Inability to concentrate on studies—Binary
- d10. I have trouble making decisions—5-point (strongly agree to strongly disagree)
- d11. Feeling tired when I go to school in the morning—5 pt

Depressive like states scale ($\alpha = 0.71$)

Feeling low (depressed)—5-point

Feeling tired when I go to school in the morning—5-point

General feelings of fatigue—5-point

Loss of appetite/weight loss—Binary

Inability to do normal daily tasks (school attendance, house chores, work)—Binary

Inability to concentrate on studies—Binary

Somatic ($\alpha = 0.74$)

(Same introductory question as depression syndrome, 5-point frequency response)

- s1. Headache
- s2. Stomach ache

- s3. Backache
- s4. Feeling dizzy
- s5. Trembling
- s6. Muscle pains

Emotional ($\alpha = 0.71$)

- e1. Irritability or bad mood—5-point
- e2. Feeling nervous/jumpy—5-point

- e3. Difficulty getting to sleep—5-point
- e4. Feelings of uncontrollable fear—Binary
- e5. Difficulty sleepin—Binary
- e6. Having nightmare—Binary
- e7. Crying episodes—Binary

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